

ABSTRACT

A solid state relay coupleable to first and second phase busses of an AC power source for switching power from the first and second phase busses to a load comprises: first and second power semiconductor switches connected in a series circuit configuration and coupleable to the first and second phase busses for switching power from the first and second phase busses to the load, each of the first and second power semiconductor switches controllably operative in conductive and non-conductive states; first and second power diodes coupled respectively across the first and second power semiconductor switches; and a control circuit for monitoring a polarity relationship of the first and second phase busses and controlling the first and second switches between conductive and non-conductive states based on the monitored polarity relationship. A method of operating the solid state relay is further disclosed.